Q-graft®

In the operating room

for intraoperative separation and concentration of adipose derived stem cells

Q-graft® is used on the sterile OR instrument table in the operating/procedure room during liposuction, or in the research laboratory, for standardized separation and concentration of high numbers of viable SVF (stromal vascular fraction) cells in a sterile closed system.

In the research laboratory

for research purposes and production of mesenchymal stem cells

In the laboratory it can help simplify the open, labor-intensive manual tasks associated with laboratory-based SVF and adipose stem cell isolation, concentration and culture.

CERTIFIED DISTRIBUTION PARTNER HUMAN MED®

Leading in water-jet technology

An innovator and leader in water-jet surgery, HUMAN MED® is the world's first and foremost manufacturer of water-jet assisted aesthetic devices. Building on a long history of success in the fields of general surgery, urology and neurosurgery, where gentle water-jet tissue dissection is essential, in 2004 HUMAN MED® turned its vision to the aesthetics field. The launch of the company's innovative body-jet®, a waterjet based infiltration, irrigation and aspiration system for removing unwanted body fat has helped to usher in a fundamentally new approach to lipoplasty and natural fat harvesting. The new unique Q-graft® system for the intraoperative harvesting of regenerative cells during liposuction will provide exciting options for adipose stem cell research and new therapies.

Technical details

Q-graft® collector

Dimensions: 14,2 (ø) x 40 (H) cm
Weight: 540 g
Aspirate volume/Lipocollector function: 75 ml
Maximum fill volume upper chamber: 200 ml
Volume of SVF cell suspension: 20 ml
Vacuum supply: -500 mbar
Mixing Frequency: 15/min
Rotation during
cross-flow filtration: up to 480/min
Control temperature during incubation: 38 °C

Q-graft® control

Dimensions: 25 (H) x 20 (T) x 15 (B) cm
(without Q-graft® collector)
Weight: 1600 g
Voltage: 100-240 V (wide-band power supply)
Protection class: II

Ordering information

REF	Product / Designation
300000	Q-graft® control
300001	Q-graft® collector
300002	Q-graft® disposable set
300003	Q-graft® centrifugation set

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Q-graft® by HUMAN MED®

Intraoperative separation and collection of adipose regenerative cells

QUALITY
Highly efficient SVF cell separation and concentration right on the sterile OR instrument table

QUANTITY
High yield of viable regenerative cells (SVF and ASC)

QUICK
Fast fat harvesting and SVF isolation in one single-use closed system

Made in Germany

The unique advantages of the Q-graft®

SVF cell harvesting at the point-of-care

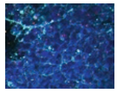
- **FAST AND EFFECTIVE**
  Separation, concentration and collection of high numbers of viable, lipid-free regenerative cells (SVF, ASC, MSC).
- **SAFETY**
  SVF cell separation in a standardized process – in a closed system – on the sterile OR instrument table.
- **POINT-OF-CARE**
  No laboratory and no centrifugation required. No transfer of tissue or cells outside the operating/procedure room, e.g. to a laboratory and back.
- **STANDARDIZED, STERILE FAT HARVESTING**
  Aspiration and collection of viable fat tissue in the Q-graft® collector – in a closed system with body-jet®.
- **OPTIMUM TISSUE DISSOCIATION**
  Heating of the lipoaspirate to 38 °C and effective mixing in the Q-graft® collector reduces the required amount of collagenase and the duration of collagenase digestion.
- **STERILE SAMPLING OF REGENERATIVE CELLS**
  The lipid-free SVF cell suspension is directly extracted from the CELLS port of Q-graft® collector into a syringe via Luer connector.

Q-graft® can be used with and without collagenase.

Research and development

Extensive research work in collaboration with renowned medical universities has been the basis for the development of the Q-graft® system.

Through this, cutting-edge technologies for the separation and concentration of adipose derived regenerative cells in a compact closed system have been enabled, which are used on the sterile OR instrument table in the operating/procedure room.



Vital adipose tissue from body-jet® lipoaspirate with blood vessels (vital staining)

Vital adipose stem cells from body-jet® lipoaspirate (vital staining)

Intraoperative separation and collection of adipose regenerative cells on the sterile OR instrument table in the operating/procedure room

The new compact Q-graft® System for the intraoperative separation and collection of adipose regenerative cells – stromal vascular fraction (SVF) and adipose stem cells (ASC) or adipose derived mesenchymal stem cells (MSC) – will enhance and facilitate the research and clinical applications of adipose derived regenerative cells in many therapeutic indications.

The Q-graft® system consists of:
- the single-use Q-graft® collector and
- the device Q-graft® control.

The Q-graft® collector enables you to collect and concentrate the lipoaspirate, and to separate the regenerative cells (SVF and ASC/adMSC) in one sterile closed system, directly on the sterile OR instrument table in the operating/procedure room, or in the research laboratory. The corresponding control unit Q-graft® control regulates the functions of the single-use Q-graft® collector. The Q-graft® collector is placed on top of Q-graft® control, directly on the sterile OR instrument table. Q-graft® control regulates the warming and mixing of the lipoaspirate during incubation, and the cross-flow filtration during the concentration of the SVF cell suspension. The lipid-free SVF cell suspension is directly extracted from the sterile Q-graft® collector into a syringe via the CELLS port.

Harvesting adipose regenerative cells in the operating/procedure room

Duration of SVF cell separation
The whole process of fat harvesting, SVF cell separation and concentration requires approximately one hour.

Use of collagenase (Humanase®)
Q-graft® can be used with or without collagenase digestion. Without collagenase the SVF cell yield will be reduced.

Recommendation
The use of a centrifugation device, like e.g. Hettich Rotofix 32 A, increases the concentration of SVF cells.The quantity and viability of nucleated SVF cells can be documented quickly with a cell counting device like e.g. Chemometec NucleoCounter 200.

Phase 1
Preparation of the Q-graft® with body-jet®

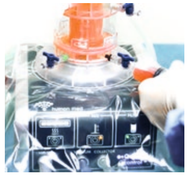
Q-graft® collector and Q-graft® control are placed on the sterile OR instrument table. Q-graft® control is covered by a sterile cover. The tubings are connected between Q-graft® collector, Q-graft® control and body-jet® as designated.

Phase 2
Collection of lipoaspirate in a closed system

Liposuction with the body-jet® starts and the lipoaspirate is directly collected and concentrated in the upper chamber of the Q-graft® collector. Waste fluid is removed automatically by the body-jet®.

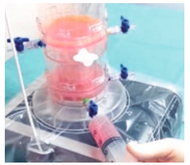
Phase 3
Incubation and mixing of the lipoaspirate with Q-graft® control

By activating the appropriate Q-graft® control buttons, the lipoaspirate is mixed and incubated at 38 °C for 45 minutes. Q-graft® can be used with or without collagenase. Human med offers a specially designed GMP grade enzyme mixture (Humanase®) with the exact dosage for this application.



Phase 4
Cell separation under cross-flow filtration, concentration of SVF cells

Immediately afterwards, the SVF cells are isolated mechanically by fractional cell separation and cross-flow filtration. The residual collagenase (if used) is removed by consecutive washing steps. The waste filtrate is removed from the Q-graft® collector WASTE port via Luer connector into a syringe.



Phase 5
Sterile collection of the lipid-free SVF cell suspension via CELLS port

After concentration in the radial filter, the lipid-free SVF suspension is extracted from the Q-graft® collector CELLS port via Luer connector into a syringe.